

ANSWERING FIRE CALLS

Washington in Front Rank with Efficient Alarm System and Equipment.

By E. C. R. HUMPHRIES.

The efficiency of the fire department of any of our cities depends largely upon the accuracy, promptness, and infallibility of the fire alarm system. Inventive genius, both mechanical and electrical, has after years of patient experiment perfected a fire alarm system that, generally speaking, never fails to do its work promptly and accurately. The fire alarm telegraph, as it is called, is one of the simplest and yet at the same time so complex and complicated to the average layman that it seems almost incomprehensible.

To the trained superintendent of the fire alarm system and his argus-eyed corps of assistants it is the simplest thing in the world. The various switchboards, annunciators, telegraph and telephone instruments, batteries, gongs, "jokers," and instruments for receiving and sending out alarms are as familiar and commonplace to the men in the fire alarm office as the ordinary telephone of commerce is to the average citizen. Each instrument has a service to perform, and as long as the electric current is kept on the wires and the instruments are in order they promptly perform their work.

Every moment of the day or night, 365 days and as many nights the year round, two watchful, sleepless men are on duty at the fire alarm headquarters in the Municipal Building. The quarters are spacious, well lighted, and so located away from the general bustle and noise of the building and street that few who have business in the Municipal Building know that this important department of the public safety of the city is there.

The value of the fire alarm in promptly receiving the alarm from the box and instantly transmitting it to every fire engine-house all over the District cannot be estimated. The efficiency of the department to a great degree depends upon the dispatch with which the engines reach the scene of the fire, as a minute or more delay may mean the loss of life and the gaining of headway of the fire that may mean the destruction of thousands of dollars of valuable property and stock which could have been prevented had the fire engines reached the fire in time to extinguish the flames at the start.

The effect of the fire department reaching a fire in the shortest possible time was demonstrated two weeks ago when the Armour packing-house on B street, near Center Market, was discovered to be burning after midnight. The alarm was sent in by the police officer on the beat. It was received at fire alarm headquarters, transmitted to every engine-house in the city, and in one minute and a half the companies in the district where the fire was located were on the ground, the engines at work, and five streams pouring into the big storeroom on the third floor front.

The building is surrounded by feed, forage, and stock, and the storeroom was filled with inflammable and combustible material. Had the department been slow in reaching the fire it would have been only the question of a minute or two when the Armour packing-house would have been a smoking furnace, endangering all surrounding property, and there would probably have been a conflagration that would have required the combined efforts of the entire department to have subdued after hundreds of thousands of dollars' worth of stock and property had gone up in smoke. As it was, the fire department had the blaze extinguished in less than five minutes after the alarm had been sent in, notwithstanding the fact that when the engines pulled up in front of the building a great sheet of flame was shooting out of the third floor front windows.

The great Chicago, Jacksonville, and Baltimore conflagrations would never have been written into history had the fires been reached and extinguished promptly by the fire departments. Promptness, therefore, it will be seen, is the essential feature of the fire alarm system and the department in reaching the fire. "Minutes lost cost millions' losses," as an old fire chief once put it.

Washington's fire alarm system is the best that money and brains can supply, and notwithstanding its up-to-date-ness, Superintendent Simpson and his electrical and mechanical assistants are always making some improvement in bringing the system up to a higher state of perfectness. In a general way it is similar to that in use by all the large cities. The ordinary fire alarm box is so common a sight in the cities that residents of large communities where the fire alarm telegraph is in use pay little or no attention to them and never give them a thought. They know that the red iron boxes are for the purpose of sending in electrically fire alarms, but rather than that there is scarcely one out of a hundred who knows how the thing is done or who could give an intelligent explanation of the working of the system.

A brief explanation of the fire alarm telegraph may be interesting and instructive. Located in the Municipal Building is the fire alarm telegraph headquarters, into which run all the circuits of wires connecting the fire alarm boxes all over the city. From the fire alarm headquarters other circuits run to the various fire engine stations. The fire alarm boxes are mechanically constructed upon the principle of the striking part of an ordinary clock, each box having a different break-wheel, with a certain number of depressions in the wheel which determines the number it will strike. To this is attached a closed circuit electric current generated by a dynamo at headquarters. Now suppose the box alarm is to be pulled from No. 45; then the break-wheel in the alarm box would strike four depressions, then two, and then five. When you open the box and pull down the lever once, that starts the mechanism going and the contact point, through which the electric current is transmitted to headquarters, falls once in each of the four depressions in the break-wheel, striking one, two, three, four. Then there is a pause in the striking at headquarters as the wheel moves quickly to the two other depressions. Then the striking of the gong in headquarters is resumed with one, two, then another pause as the wheel moves to the last set of depressions in the break-wheel, when one, two, three, four, five are struck. This is repeated four times.

In the meantime, as soon as the alarm starts to come to the operators in the fire alarm headquarters to busy. One operator goes to the automatic recording machine, where each stroke of the alarm box is recorded, while another operator goes to the big transmitting instrument, sets it to the number of the box struck, and after the box number is verified, all of which takes less than the time to tell it, the operator at the transmitting machine pulls a lever and the alarm is instantly sent to every fire engine house in the city.

The two principal instruments in the fire alarm headquarters are the receiver that receives the alarm from the box pulled and which is automatically recorded on a sheet of white paper similar to a ticker of the stock exchange or a code-facsimile Morse instrument, and the transmitter. The latter instrument has a

set of disks numbered. In the case of box 45 being pulled, the transmitting operator quickly moves the disks to the numbers 4, 2, 5, and by setting the transmitter in operation the big gongs in all fire engine houses are struck 4, 2, 5, indicating the location of the box nearest the fire reported and also indicating upon a schedule of runs conspicuously placed in each fire house, and as familiar to the firemen as their A B C's, just what engines go to the fire on first, second, and third alarms from the box 45 pulled. However, when alarms are sent in to the engine houses every company responds to attention, the men turning out, the horses hitched to the engines, and everything in the zone of the box pulled hurry to the fire as fast as their horses can get there, while every other company in the city holds itself in readiness to move on the second alarm. When the first company reaches the fire, headquarters is communicated with through a small telephone arrangement in the fire alarm box. The removal of the transmitter is instantly recorded in fire alarm on the switchboard. Then the operator puts in a plug, connecting his phone, and a conversation is held, in which the fireman talking fire and if additional apparatus is needed. If so, other engines are called out. Upon arrival of the battalion chief in whose district the fire is located he communicates by phone with headquarters, and if he needs other engines, he sends in a second alarm, which brings out another set of engines, and, if need be, a third and fourth alarm that brings out additional apparatus. The general alarm is sent in cases of big fires brings every engine, truck, and other apparatus.

The layman would suppose that every act of the operators in fire alarm headquarters is done hurriedly or excitedly. Nothing is more erroneously conceived. The trained operator, while he moves with the precision of rapidly operated machinery, is never excited and his every act is done with a certainty and calmness that make it possible to avoid mistakes. When the number of the box reporting a fire is definitely ascertained, and not till then, the alarm is sent out to the engine houses. From the time the alarm is first received from the fire alarm box, possibly miles away, until it has been transmitted to the engine companies and the apparatus is in rapid motion on its way to the fire, less than half a minute has elapsed. An example of the rapidity of the fire alarm system is first received from the fire alarm box, possibly miles away, until it has been transmitted to the engine companies and the apparatus is in rapid motion on its way to the fire, less than half a minute has elapsed. An example of the rapidity of the fire alarm system is first received from the fire alarm box, possibly miles away, until it has been transmitted to the engine companies and the apparatus is in rapid motion on its way to the fire, less than half a minute has elapsed. An example of the rapidity of the fire alarm system is first received from the fire alarm box, possibly miles away, until it has been transmitted to the engine companies and the apparatus is in rapid motion on its way to the fire, less than half a minute has elapsed.

In addition to Supt. J. C. Simpson, who has been nearly thirty years in his present position, these men look after the safety of the city in three shifts, the first named being the fire-alarm operator and the second the fire-alarm telephone operator. First trick, L. F. Mothershead and E. Watson; second trick, A. H. Morehead and D. F. Hobson; third trick, A. James and Fergusson. Fergusson, operator, has served the fire-alarm system for sixteen years. In addition to these there are always engaged from ten to twelve firemen and experts looking after the lines and boxes, and three men who go night and day looking after trouble on the wires. In addition to the 40 fire-alarm boxes, there are 225 telephone points from which fire alarms are reported to headquarters, sending out the alarms to the engines. There are twenty-two engine companies, ten truck houses, three chemical engines, and one fireboat station.

The old fire-alarm boxes report an alarm four times to headquarters, while the new continuous alarm boxes repeat the alarm eight times. The alarm sent out to the engine houses is done twice, and is recorded on an instrument at each fire engine house, and in addition an indicator above the gong shows the number of the box in large figures and the gong rings. There is no chance to mistake the box number, for it is given by sound, recorded on the machine, and indicated on the disk above the gong.

Recently there have been installed a large number of fire-alarm boxes with the key in position ready to open the box, and only protected from outside interference by a thin sheet of glass. By breaking the glass, the key is reached, and the box opened and the alarm sent out to the engine houses. The old style box required the placing of the key at some near-by convenient place, and in case of fire at night delay and trouble was experienced in getting the key to open the box in the absence of a police officer. The new style box does

PROTECTING WASHINGTON HARBOR FRONT FROM FIRE.



away with this delay, as any one can break the glass, turn the key, and send in the alarm.

When the District government moved into the new Municipal Building last year it was necessary to move the old District government telephone central, No. 600, and fire alarm headquarters from over Engine Company No. 14, in Eighth street above E, to their present location in the Municipal Building. This big undertaking was accomplished by installments, without attracting attention and without missing a single call or alarm. Such a thing had never before been accomplished by any city.

Every public hall, hotel, theater, and public building is connected with the fire alarm system by alarm boxes located in the buildings.

The efficiency of the District of Columbia Fire Department, of which the fire alarm is an important part, is shown in the report of statistics of the National Board of Fire Underwriters for American cities having a population of 20,000 and upward for 1908, shows that Washington with an area—the District of Columbia—of seventy square miles and a population of 330,000 had 1,000 alarms of fire in which the total loss was only \$347,264, covered by insurance of \$4,244,584, with the number of fires to the population of 1,000, 2.76, and loss per capita of 1.02. With this record the National Capital stands A1 in the fire underwriters' records, and placed as a safe risk in insurance.

The fire alarm system was first introduced in Boston in 1852, and seven years later it was put in at Baltimore. The system was put in in this city on October 12, 1864. Since its introduction it has been greatly improved. During the last twenty years there has not been a single alarm sent in from a fire alarm headquarters that has not reached fire alarm headquarters promptly, and as promptly transmitted to the engine houses.

The telephone operators who operate "600," the central telephone service of the District government, and operated in conjunction with the fire alarm system, are John L. Kerney, N. P. Swearingen, W. M. Gibson, L. Hines, H. Merchant, J. W. Walton, and A. R. Johnson.

HOW CITY FIGHTS WATER-FRONT FIRES

Protection Afforded to Harbor by Fire Boat.

ALSO USED AS ICE BREAKER

The "Firefighter" Bears the Serial Number of 19 in the Department, and is Stationed at Foot of Seventh Street—Can Throw Stream 500 Feet, or 350 Straight Up in the Air.

By E. C. R. HUMPHRIES.

The fire protection of a big city is probably one of the most important branches of public safety in the general scheme of municipal government, certainly it is the most important in the protection of property, and in a large measure comes in as an important factor in the protection of life from the destructive element of fire.

Where a big city has an extensive water front, as in the case here in Washington, with valuable wharf property, storage warehouses, and wholesale repositories of large quantities of valuable property, together with fortunes invested in the river craft in the harbor, the fire protection of the water front and the territory adjacent thereto is one of the great problems of fire protection that must be considered and looked after by municipal officers in executive capacity.

Washington's fire department, acknowledged by fire chiefs and underwriters to be one of the best in the country, bears the additional distinction of having in its department one of the best harbor fire protections possessed by any other city, large or small. The harbor fire protection is embraced in all that territory running along both shores of the Eastern Branch of the Potomac, from Upper Anacostia to the junction of the Eastern Branch with the Potomac at Gleason's Point, where is located the Fifth-Stirling steel plant; thence up the Potomac River to and including Georgetown to the Aqueduct Bridge.

Often Readers Assistance.

Not only does the harbor fire service have to look after the fire protection of property located directly along the water front, but is frequently called upon to render assistance to the regular land service by laying lines of hose several blocks away from the water front and fighting the fire inland.

This service consists of a modern fireboat known as "The Firefighter," and

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The location is in the best and most rapidly improving section of Washington. The property owners surrounding this suburb are the most prominent and influential business men of the District, and it lies just one block west of the U. S. Naval Observatory, a short distance from the new seven-million-dollar Cathedral, and many other large improvements are in its immediate vicinity, representing many millions of dollars.

Fifteen lots sold since our opening day last Sunday.

Terms as low as \$50 cash and \$10 per month. Lots from \$500 to \$1,500.

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How to Reach the Property.

The easiest way for you is to use our free automobile service from our offices, or take the F street cars and transfer to Wisconsin avenue. Get off at the upper end of the United States Naval Observatory. You will see our Branch Office at 2552 Wisconsin avenue. Gentlemen salesman on the grounds.

Car fare refunded to all visitors and purchasers.

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Cut this coupon out and mail to us for information: THE INTERNATIONAL REALTY & DEVELOPMENT CO. (Inc.), 313-314 Colorado Building.

Please send me information how I can save \$60 on the price of your lots.

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E. MACHT, President.

bears the serial number of the department of No. 19. The home of the "Firefighter" is in a commodious, modern, well lighted and ventilated fire house at the foot of Seventh street southwest, just below the Norfolk steamboat wharf and adjoining the District morgue. The fire station has a regular alarm station equipped with all modern fire alarm appliances, telephones, and other conveniences. On the main floor is located the alarm room, in charge of an operator day and night. Then there is a reading room, a drill room, bath, toilet, and lavatory, and storeroom. On the second floor is located the office of the captain, or "skipper," as he is called by the men, and a large sleeping room, with room standard cots. The men respond to an alarm at night by a sliding pole running to the ground floor.

Pride of Fire Department.

In the rear of the station is the wharf or berth of "The Firefighter." This trim vessel is the pride of the fire department and the rivermen and business interests lying along the river front, the rivermen feeling an assurance of safety and protection in the boat that would be absent if this boat was not there to look after the harbor. "The Firefighter" is of heavy steel construction, single screw propelled, equipped with a single high pressure marine engine of 350 horsepower, 300-horsepower boiler, with two high pressure pumps of 250 horsepower each, which are capable of developing a pressure of 250 pounds to the square inch.

The vessel was built for the District of Columbia by the Harlan & Hollinsworth Company, of Wilmington, Del., under specifications furnished by the fire department, and went into commission July 1, 1906. She is 101 feet long over all, 23 feet 6 inches beam, and draws 9 feet of water. She has a speed of twelve miles an hour. Two double-acting Blake pumps, with a capacity of 2,000 gallons of water each, or 4,000 gallons a minute, can be thrown from her pipes. The boat is always under steam and can get away under full speed in answer to an alarm within a minute of receiving the call.

The boat is one of the most powerful fireboats in the country. There are two monitors, one forward and one aft; four turrets for throwing water direct from the boat onto a wharf or burning building or vessel, and fourteen connections for 2½-inch hose lines that can be laid a long distance inland in case of necessity, or carried onto a burning wharf near by.

Equal to Six Engines.

The relative value of "The Firefighter" as compared to steam fire engines is that she is equal to six of the largest steam fire engines made, and can do more work than eight of the second size engines in use in the fire department of any city. With the boat in full fighting trim she can throw 120 barrels of fifty gallons each to the minute. Her forward and aft monitor pipes can be equipped with from a 2½-inch nozzle to a 4½-inch nozzle, and will throw a solid stream of water a distance of 500 feet, and more than 250 feet straight up in the air. The value of "The Firefighter" has only been tested twice on the city's water front, when it was demonstrated that she was an invaluable part of the service. Her work at the recent big fire on the water front at Alexandria contributed in large measure to the extinguishment of a conflagration that threatened the total destruction of the colonial town.

This boat is not only a fire fighter, but two years ago she was sent to a Baltimore shipyard, where her prow was equipped with a strong ice breaker. The boat is used every winter to break up

the ice in the harbor, and in that capacity saves the District government large sums of money formerly paid out to tugboats in breaking up the ice so as to prevent ice jams and the damaging floods in the upper harbor.

Recently the boat has come off the ways at the navy yard, where she underwent extensive repairs, improvements, and was repainted from keel to the top of her funnel. Among the improvements added to the boat were a compressed air pump, and overhauling of the pumps and machinery of the fire department, the government only having to pay for the raw material, the work being done in the District machine shop. Following the boat coming off of the ways she was given a trial trip to test her pumps down the Potomac as far as Alexandria. The test demonstrated the fact that the boat was a superior fire fighter to the boat when received from her builders.

Commissioner Macfarland, who has charge of the fire department, and under whose direction comes "The Firefighter," is particularly proud of the vessel and her ability to handle a big fire on the water front. The boat originally cost \$60,000, less than the amount appropriated by Congress. The improvements added have cost practically nothing, but have been extensive and valuable.

The engineers, pilots, and firemen constitute the crew of the boat, while the others attached to the station make up the fire crew. The personnel of the station follows: Jacob Stulz, captain; J. W. Hurley, lieutenant; T. W. Reed, engineer; R. A. Harrison, engineer; W. Glynn, assistant engineer; C. J. Tennison, assistant engineer; J. B. Raleigh, pilot; W. H. Kullman, pilot; J. A. Richardson, fireman; G. E. Klein, fireman; R. G. Tegeier, R. E. Wilson, M. A. Downs, C. W. Maradeke, J. B. Klein, E. L. Jones, H. S. Stevens, M. F. Pratt, privates.

Dr. Woodward Gets Home.

The A. F. Fox Company has sold for H. P. Morrill, the property at 1706 Lanier place to Dr. William C. Woodward, health officer of the District government. The consideration is stated to have been \$15,000. The property is improved with a three-story brick house of eleven rooms, two baths, and all modern conveniences, and has an attractively finished interior. The lot has a frontage of fifty feet, running back to an alley 150 feet. With the purchase goes a 3½-foot frontage adjoining the improved property on the west. The residence is described as one of the many handsome modern homes in that residential section.

INDUSTRIAL NOTES.

One-third of all the tonnage under the American flag is employed on the Great Lakes.

The recent discovery by a French chemist of a simplified method of wood distillation, it is said, will greatly cheapen the production of acetone.

A government prospector who was searching for coal in the south of India discovered a valuable deposit of tantalite, the first found in that country.

The brown coal of the Australian state of Victoria has been found to be rich in ammonia sulphates and to be well adapted to making producer gas.

Magnesium is now being employed as a deoxidizer in brass manufacture, having that advantage over phosphorus that an excess may be used without harm.

Steam trawlers, similar to those used in the northern waters of Europe, are to be introduced in the fishing industry of the coast of British Columbia.

In the centers of population alone rats damage property worth \$30,000,000 a year in the United States, according to Secretary of Agriculture Wilson.

The semicentennial of the establishment of the kingdom of Italy will be celebrated at Turin in 1911, with an international exposition of industries and labor.

Sir Oliver Lodge's theory that fogs may be dispelled by passing electric currents of high voltage through the atmosphere is to be tried on an extensive scale at London.

After ten years of unsuccessful testing, oil has been found in immense quantities on the island of Sakhalin by a Russian mining engineer. Refining will soon begin.

As excavations at Herculaneum do not promise important results, the Italian Archaeological Commission has recommended that the government continue the work at Pompeii instead.

An estimate by the Geological Survey places the country's production of Portland cement in 1908 at 40,000,000 barrels, a decrease from the 1907 output of nearly 20 per cent.

A gun for throwing a life line to a wrecked vessel by the use of air compressed by hand in an attachment to the gun is a recent English invention which has worked well in tests.

The recipe for Worcester sauce, which has made an English firm both wealthy and famous, was a secret in an old English family for generations until a butler sold it for a few all amount.

A cotton picking machine on the principle of the vacuum cleaner, it is claimed, gathers 700 pounds of cotton per operator in ten hours at a cost averaging less than \$2.

The new subway through the heart of Boston's shopping district is the most expensive mile of underground railroad in the world, having cost, with equipment, about \$10,000,000 to build.

Chemists in America are trying to rediscover the method of dyeing the color known as Tyrian purple with secretions from certain forms of mollusk. Secret was lost in the Middle Ages.